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North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor
William G. Ross, Jr. Secretary

December 22, 2008

Mr. James Jenkins
Martin County C&D Landfill
P. O. Box 668
Williamston, North Carolina 27892

Re: Application for Continued Operation
Martin County Construction and Demolition Landfill (C&DLF)
Martin County, Permit No. 59-01, Doc ID No. 6372

Dear Mr. Jenkins:

The Division of Waste Management (Division), Solid Waste Section (Section) has completed an initial technical review of the application submitted for the continued operation of the Martin County C&DLF by Municipal Engineering Services Company. Rule 15A NCAC 13B .0547(2) required submittal of a closure and post-closure plan prepared in accordance with Rule .0543 and financial responsibility in accordance with Rule .0546. Requirements from other rules are incorporated by reference and are noted in the comments and requests below.

General Application Requirements and Processing for C&DLF Facilities [15A NCAC 13B .0533]

15A NCAC 13B .0533 (b) states that all applications and plans required by Rules .0531 through .0547 should be prepared in accordance with the guidelines in .0533(b).

1. The application did not contain a statement defining the purpose of the submittal signed and dated by the applicant.
2. The project title should be the same on the cover sheet of the application and the drawings. I would suggest using "Martin County Construction and Demolition Landfill, Williamston, North Carolina" on the cover sheet for the drawings because it includes the location. It would also be helpful to include the permit number in the title.
3. The cover sheets for the application and drawing did not include the applicant's name. Please put "Martin County" or "County of Martin" on the drawing.

Engineering Plan for C&DLF Facilities [15A NCAC 13B .0539]

15A NCAC 13B .0547 (2)(a) states that a closure and post-closure plan be prepared in accordance with Rule .0543. 15A NCAC 13B .0543 (b) (1) states standards must be established for the scheduling and documenting of closure of all C&DLF unit and design or the cap system and that construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541. 15A NCAC 13B .540 (6) states that engineering structures, including cap systems, incorporated in the design and necessary to comply with the requirements of this Section must be specified in the engineering plan. Material, construction, and certification requirements necessary to ensure that the structure is

constructed in accordance with the design and acceptable engineer practices must be included in the plans and prepared in accordance with Rule .0539.

4. The application should include an engineering plan supporting the final cap design. Requirements for the engineering report are listed in .0539 (d). The report must include a discussion of the analytical methods used to evaluate the design, definition of the critical conditions evaluated and assumptions made, and a list of technical references used in the evaluation. The information and calculations should demonstrate that the proposed cover will be stable and safe during the post-closure period.
5. The engineering drawings did not meet the requirements of .0539 (e). For example, the landfill elevations on CL1 (Existing Conditions) are the same as CL2 (Closure Plan for Proposed Methane Venting Plan) which would indicate you are closed. Please review the requirements for drawings and revise.

Construction Requirements for C&DLF Facilities [15A NCAC 13B .0540]

15A NCAC 13B .0543 (b) (1) states standards must be established for the scheduling and documenting of closure of all C&DLF unit and design or the cap system. Construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541 of this Section.

6. The drawings did not provide the information needed to determine if a monitoring zone as described in .0540(1) (d) is necessary.
7. Please address the requirements for survey control and location coordinates which would be important for construction during closure.
8. Please provide documentation to verify that the structures and measures shown for sedimentation and erosion control meet the requirements listed in .0540(7).

Construction Quality Assurance for C&DLF Facilities (15A NCAC 13B .0541)

15A NCAC 13B .0543 (b) (1) states standards must be established for the scheduling and documenting of closure of all C&DLF unit and design or the cap system. Construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541 of this Section.

9. While 1.2 – 1.5 of the closure plan discusses some of the tests that will be used in the construction of the cap, the requirements should be submitted as a Construction Quality Assurance (CQA) plan as described in .0541 (b). The responsibilities and authorities, inspection activities, sampling strategies and documentation that should be addressed in a CQA plan are needed in order to ensure that the work is done properly and to provide the data for CQA report to finalize the closure. [.0541(a) – (b)]
10. There was no mention of a CQA report after the cap construction is completed. The purpose and requirements for the CQA report are in .0541 (c). The closure plan should state what information will be included in the report and note that it must be certified. It should also mention the submission of the CQA report to the Division.

Closure and Post-Closure Requirement for C&DLF Facilities (15A NCAC 13B .0543)

11. The cap system must be designed and constructed to have a permeability less than or equal to the soils underlying the landfill, or the permeability specified for the final cover in the effective permit, or a permeability no greater than 1.0×10^{-5} cm/sec, whichever is less. Please include a discussion of the basis for your design assumptions in the engineering report.

12. Post-settlement surface slopes were not addressed. This should also be done in the engineering plan.
13. All closure activities must be with 180 days. The first sentence in the third paragraph of section 1.1 agrees with this. The first sentence in the first paragraph could be misinterpreted. Please revise.
14. The closure plan did not include an estimate of the maximum inventory of wastes onsite over the active life of the landfill facility.
15. In section 1.1 of the closure plan, it is stated that "Extensions beyond the one-year deadline for beginning closure for beginning closure may be granted". Please remove "one-year" to match the language in the rules.
16. The closure plan should include a schedule for all activities necessary to satisfy the closure criteria.
17. More detail is needed for the cost estimate of the closure activities. For example, in item 1 the unit cost for soil is \$9 per cubic yard versus \$4 in item 2. What makes the unit costs different? Provide basis for all the costs assumed.
18. Please include in the post-closure plan the use restrictions listed in .0543(f) (3) and the need for approval by the Division for a change in use.
19. Do you plan to mow the grass? Are there gates, roads, signs etc. that will need to be monitored and/or maintained? Please include in plan and estimate.
20. The maintenance activities should also address making repairs to maintain the integrity and effectiveness of the cap system as listed in .0543(e) (1) (A).
21. There is a ground water and surface water sampling and analysis plan (SAP) at the end of the submittal binder. It is not referenced in the closure or post-closure plan. The document and its purpose are confusing. Locations for monitoring wells are approved by the Division when the Design Hydrogeologic Report is approved. It is not appropriate to propose new monitoring wells in the middle of a SAP. If this is a new sampling procedure document, it should be based on current guidance. There was no reference to the source or date of the N.C. Water Quality Monitoring Guidance Document for Solid Waste Facilities that you cited. This may be an outdated document. Current guidance can be found at http://www.wastenotnc.org/swhome/enviro_monitoring.asp.
22. The description of monitoring activities should provide details. For example, what are the locations that will be sampled? Have these locations and analyses been approved by the Division?
23. Please review requirements for gas control and revise.
24. Please note that at the end of the post-closure care a professional engineer will need to certify that the post-closure care was completed in accordance with the post-closure plan. Unless he has been there the whole post-closure period, he will probably need documentation of the care to make his certification. Do you plan to keep records of the maintenance and monitoring activities in the landfill records? Will they be adequate for a PE certify? If so, please describe.
25. More detail is needed for the costs in the post-closure estimate similar to comment 17.

Due to the number of corrections needed throughout the document, I would suggest that you revise the entire submittal. Please note on the title page that it is a revised submittal. Two paper copies plus one electronic copy are needed. Please proofread your submittal carefully.

These comments are intended to expedite the review of the referenced application, and in no way do they restrict the Section's right to request additional information during the continuance of the technical review

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process. If you should have any questions regarding this matter please contact me at (919) 508-8542, or by email at pat.backus@ncmail.net .

Sincerely,

A handwritten signature in cursive script that reads "Pat Backus".

Patricia Backus, P.E.
Environmental Engineer
Solid Waste Section

cc: Jimmie Woodie, P.E., MESCO
Wayne Sullivan, MESCO
Ed Mussler, DWM
Dennis Shackelford, DWM
Ben Barnes, DWM